FIRE PROTECTION NOTES

- INTENT: THE INTENT OF THE DRAWINGS IS TO PROVIDE THAT THE WORK AND ALL PARTS THEREOF SHALL BE. WHEN FULLY COMPLETED, SUITABLE IN EVERY WAY FOR THE PURPOSES FOR WHICH IT IS INTENDED. PROVIDE ALL MATERIALS AND LABOR NECESSARY TO MAKE THE SYSTEM FULLY OPERABLE AND IN COMPLIANCE WITH ALL APPLICABLE CODES. WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE BUILDING CODE, LOCAL AMENDMENTS AND THE REFERENCED NATIONAL FIRE PROTECTION ASSOCIATION CODES INCLUDING NFPA 13, 14, 20 AND 24.
- DRAWINGS: THE DRAWINGS ARE SCHEMATIC REPRESENTATIONS OF THE WORK TO BE DONE. THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR DOING HYDRAULIC CALCULATIONS AND PREPARING WORKING DRAWINGS SHOWING ACTUAL SIZE AND LOCATIONS OF ALL WORK.
- COORDINATION: COORDINATE ALL WORK AND WORK SCHEDULES WITH THAT OF OTHER TRADES AFFECTED BY THE ENTIRE SCOPE OF THE PROJECT SO THAT ALL WORK MAY BE INSTALLED IN THE MOST DIRECT AND WORKMANLIKE MANNER AND SO THAT INTERFERENCE WITH DUCTWORK, PIPING, EQUIPMENT, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL COMPONENTS AND OTHER WORK IS AVOIDED.
- INSTALLATION SHALL PERMIT ACCESSIBILITY FOR SERVICE OR REPLACEMENT.
- ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE FIRE PROTECTION SUBCONTRACT, LABOR AND TESTING PERFORMED HEREIN SHALL BE IN COMPLETE ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE, LOCAL AUTHORITIES HAVING JURISDICTION. NATIONAL FIRE PROTECTION ASSOCIATION, INSURANCE REGULATIONS AND REQUIREMENTS GOVERNING SUCH WORK.
- PERMITS REQUIRED FOR THE WORK SHALL BE PROVIDED INCLUDING ALL FEES OR EXPENSES INCURRED.
- UNLESS OTHERWISE NOTED, IT IS THE INTENT OF THESE DOCUMENTS THAT THIS AREA SHALL BE 100% SPRINKLERED. PROVIDE A COMPLETE HYDRAULICALLY CALCULATED SPRINKLER. HYDRAULIC CALCULATIONS SHALL INCLUDE A 10 PSI BUFFER.
- 8. THE SPRINKLER CONTRACTOR SHALL PREPARE WORKING DRAWINGS OF THE SPRINKLER WORK AND OBTAIN APPROVALS FORM THE LOCAL FIRE DEPARTMENT, BUILDING DEPARTMENT. OWNER'S INSURANCE AGENT AND ARCHITECT PRIOR TO INSTALLATION. SUBMIT TO ARCHITECT ONLY AFTER APPROVAL BY OTHER AUTHORITIES. WORKING DRAWINGS SHALL BE STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL FIRE PROTECTION ENGINEER.
- ROUTING OF SPRINKLER MAINS. BRANCHES AND HEADS SHALL BE THOROUGHLY COORDINATED WITH OTHER TRADES AND BUILDING STRUCTURE PRIOR TO SUBMISSION OF COORDINATED SHOP DRAWINGS. ALL CEILING HEIGHTS INDICATED ARE APPROXIMATE. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL NECESSARY MEASUREMENT REQUIRED FOR PRODUCING HIS WORKING DRAWINGS.
- 10. ALL PIPING SHALL BE PROTECTED AGAINST DAMAGE FROM EARTHQUAKES. EARTHQUAKE PROTECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF NFPA 13.
- WHERE APPLICABLE, REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF SPRINKLER HEADS.
- 12. SPRINKLER HEADS IN AREAS WITH NO FINISHED CEILING SHALL BE UPRIGHT TYPE, LOCATED AS HIGH AS POSSIBLE, HEADS SUBJECT TO PHYSICAL DAMAGE SHALL BE INSTALLED WITH PROTECTIVE CAGES. IN AREAS WITH FINISHED CEILING, SPRINKLER HEADS SHALL BE CONCEALED PENDANT TYPE WITH COVER PLATE (COLOR OF COVER PLATE SHALL BE APPROVED BY THE ARCHITECT).
- 13. WORK SHALL BE PROPERLY AND EFFECTIVELY PROTECTED AND PIPE OPENINGS SHALL BE TEMPORARILY CLOSED TO PREVENT OBSTRUCTION AND DAMAGE BEFORE COMPLETION.
- 14. PITCH ALL DRY PIPE SPRIM=NKLER AND STANDPIPE SYSTEMS TO DRAIN. PROVIDE AUXILIARY DRAINS AT ALL LOW POINTS.
- 15. PIPE PROTECTION BARRIERS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR WHEREVER PIPING IS SUBJECT TO DAMAGE. COORDINATE LOCATIONS OF ALL BARRIERS WITH GC.

NEW WORK (SHOWN DARK)



SPRINKLER PIPING - DSP DRY STANDPIPE FDV FIRE DEPARTMENT VALVE UPRIGHT SPRINKLER HEAD PENDANT SPRINKLER HEAD DRY PENDANT SPRINKLER HEAD SIDEWALL SPRINKLER HEAD BUTTERFLY VALVE

CHECK VALVE POST INDICATOR VALVE -

PRESSURE GAUGE RISER DOWN BRANCH-TOP CONNECTION

GATE VALVE

BRANCH-BOTTOM CONNECTION CAP ON END OF PIPE

UNION

FLANGE STRAINER

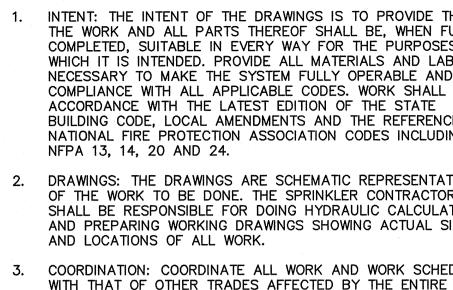
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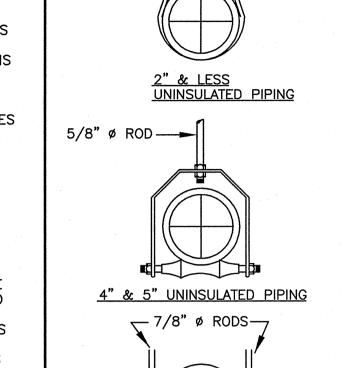
DIRECTION OF FLOW

DOWNWARD DIRECTION OF PIPE PITCH DOUBLE CHECK BACKFLOW PREVENTER

DCBFP FDC FIRE DEPARTMENT CONNECTION

PIPING TO BE HEAT TRACED





6" & 8" UNINSULATED PIPING

PIPE HANGER DETAIL

NOT TO SCALE

RISER BRACE

FASTENER-

FASTENER-

SCH. 40 PIPE (UON)

1" SCH. 40 PIPE (UON)

SCH. 40 PIPE (UON)

3/8" Ø ROD ─

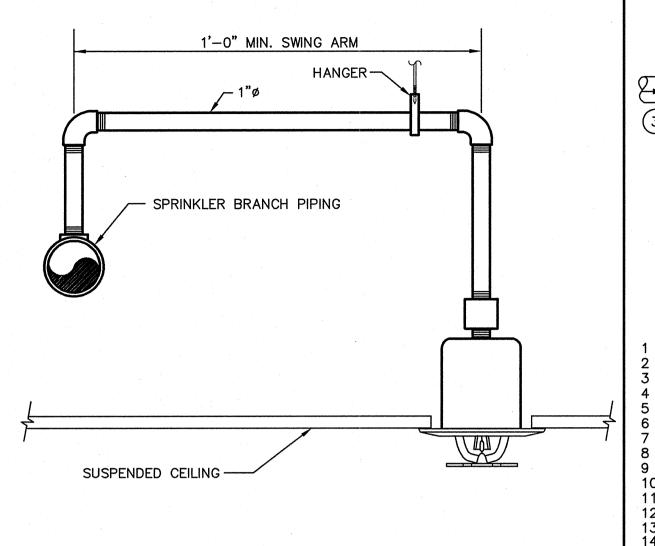
NOTE: ALL HANGERS.

SUPPORTS, RODS AND

FASTENERS SHALL BE

GALVANIZED STEEL

HOT DIPPED



DETAIL OF PENDANT SPRINKLER HEAD MOUNTING

NOT TO SCALE

FLOOR ----

MECHANICAL JOINTS WITH

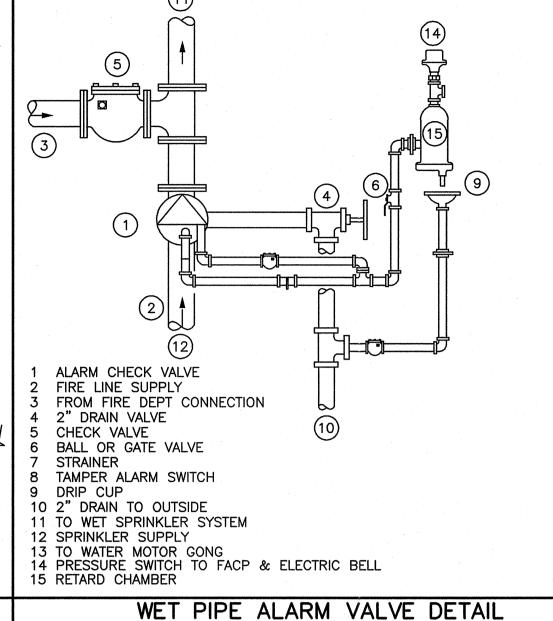
RETAINER GLANDS

CONCRETE THRUST

UNDISTURBED EARTH-

I.P.S. STEEL SLEEVE -

FLUSH TO UNDERSIDE -



NOT TO SCALE

- BACKFILL

- FLEXIBLE COUPLINGS -

CEMENT LINED DUCTILE IRON

24" MAX.

MAINTAIN 5' OF COVER

OVER WATER SERVICE -

WATER SERVICE ---

SMOOTH BORE CORROSION RESISTANT OUTLET GIVING FLOW

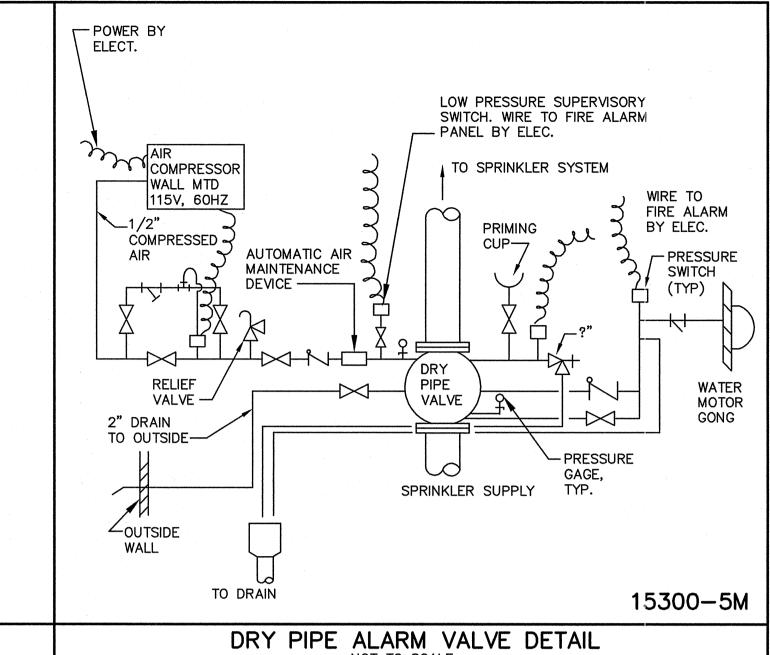
EQUIVALENT TO ONE SPRINKLER ---

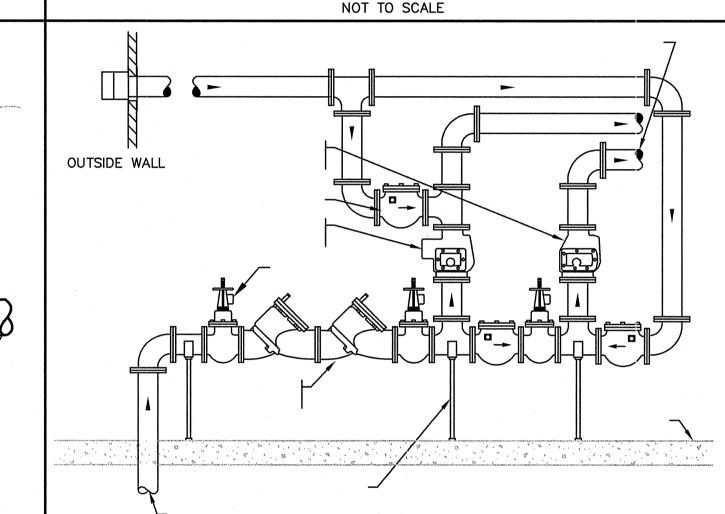
INSPECTOR'S TEST CONNECTION

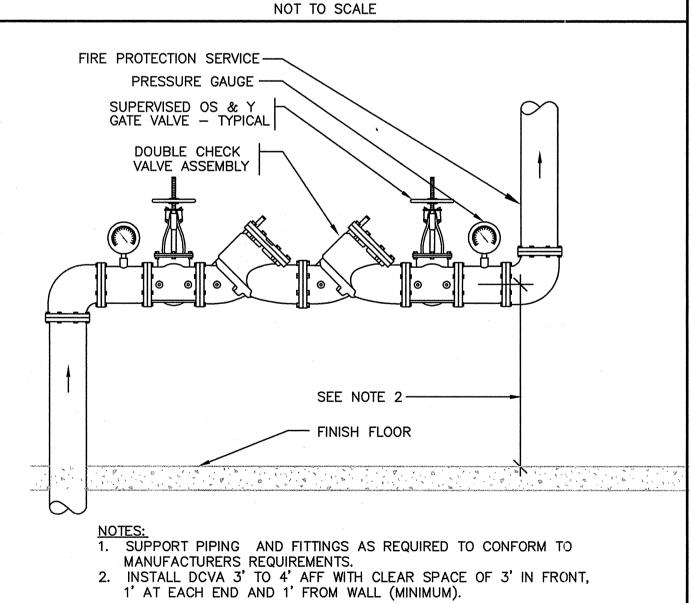
NOT TO SCALE

— FOUNDATION WALL

FLOW







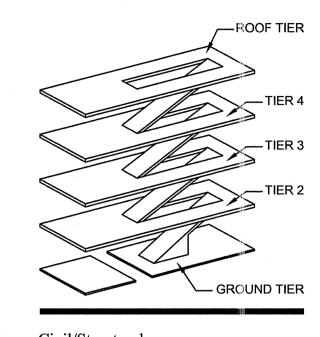
FIRE PROTECTION SPRINKLER SCHEMATIC

DOUBLE CHECK BACKFLOW PREVENTER DETAIL NOT TO SCALE

> **60% SUBMITTAL** May 2, 2005

JAM Parking Structure 101-115 Middlesex St.

City of Lowell, MA



Civil/Structural:

Parsons Brinckerhoff Quade & Douglas, Inc. 75 Arlington Street Boston, MA 02116 Tel: 617-426-7330 Fax: 617-482-0642

Architecture: Fennick McCredie Consultants

Judith Nitsch Engineering

No. Date Revision 18913A RBG Checked By: RBG

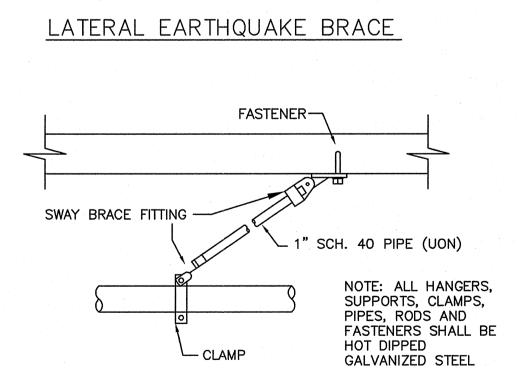
5/2/05

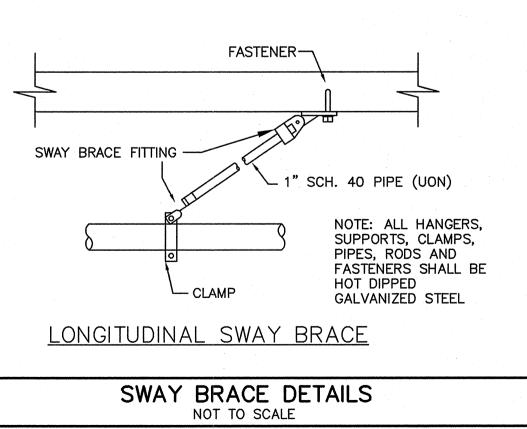
KEY PLAN

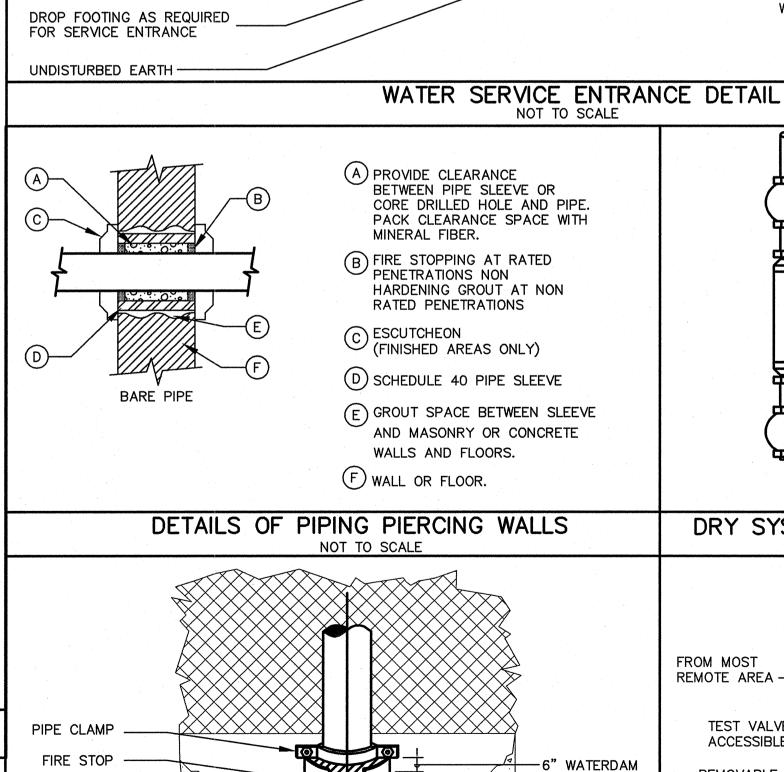
Scale:

FIRE PROTECTION GROUND FLOOR PLAN

FP-1







DETAIL OF PIPING PIERCING FLOORS

NOT TO SCALE

" VALVE - 2" x 12" NIPPLE OR EQUIVALENT VALVE - 1" NIPPLE AND CAP OR PLUG DRY SYSTEM AUXILIARY DRAIN NOT TO SCALE FROM MOST REMOTE AREA ---TEST VALVE IN READILY ACCESSIBLE LOCATION -REMOVABLE SPOOL PIECE MINERAL FIBER FOR DRY PIPE SYSTEM -

REBAR WELDED

STEEL PIPE SLEEVE

-SCHEDULE 40

TO SLEEVE (3 EACH)